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ABSTRACT

The developmental procedures used in constructing a competency-based, student teacher/in-service program are described in this report. These procedures evolved from redesigning the St. John Fisher College Teacher Education Program to include behavioral objectives. The five steps employed to provide these objectives were: a) stating a goal; b) setting down performance statements or activities to define the goal; c) identifying true performance statements; d) describing each performance statement in relation to knowledge, performance, product, affective, and experiential objectives; and e) modifying these statements to assure the achievement of the goal. From the stated behavioral goal, modules were constructed. The characteristics of an instructional module were that: a) fitness should be the focus of the program; b) objectives should be behavioral; c) diagnostic and instructional materials, and assessment techniques, should be provided; and d) the package should be self-contained. Some questions used in critiquing the module are presented. The appendixes include information on definitions, performance statement identification, a systems design for development of performance statements, and a programmed system for modular development. (BRB)

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A PROCEDURE FOR DEVELOPMENT OF COMPETENCY--BASED PERFORMANCE STATEMENTS AND MODULE DEVELOPMENT FOR USE WITH INSERVICE AND PRESERVICE EDUCATION

One aspect of a cooperative teacher training project between the Rochester City School District and St. John Fisher College has been student teacher-inservice program development introducing in part competency-based training.

In the redesign of the St. John Fisher College Teacher Education Program moving toward a competency-based program it was necessary to identify the goals of the program from a competency-based framework rather than from the traditional courses and credits framework. The process employed in development of the program goals at St. John Fisher College included a series of five steps whose completion resulted in movement from stating a general goal to increasing specificity resulting in a program objective which is stated behaviorally. The steps are as follows:

A. Write down each goal statement on a separate worksheet as provided. (See Appendix B)

   Example: A teacher demonstrates skill in implementing actions based on analysis of self and value structure, when he
   1. acquires increasing competence in evaluation of progress
   2. possesses the skill of making change
   3. evidences a willingness to seek self improvement

B. Write down performance "statements" or "activities" which could define the goal statement of the worksheets. (See Appendix B)

C. Identify true performance statements. (See Appendix C)

D. Describe each performance statement as a knowledge objective, performance objective, product objective, affective objective, experiential objective, (K, P, P, A, E) which identifies the conditions and/or the extent of the performance to be met. (See Appendix B)

E. Modify these statements until we can answer the question: If someone completed these performance activities, would we be willing to say a person has achieved the objective?

Source of Ideas: Robert Mager, Goal Analysis, Fearon, 1972.

In completing the step of identifying performance statements a college which is developing a preservice program or a public school which is developing an inservice program may begin with their own performance statements by identifying what they want their teachers to be able to know or demonstrate.

Competency-based implies that the knowledge or skill objectives gained or refined through the instructional module are demonstrable and can be observed by supervisors or evaluators. Because the modules can be used in an independent study mode they lend themselves to development of an individualized program. They may be adapted for the following purposes:

1. preservice teacher training

2. inservice teacher training

3. instructional use in public schools
   a. elementary settings
   b. secondary settings
   c. most discipline areas

Once performance statements have been identified, the building of modules may commence. The modules should be completely self-contained packages including all materials and citing resources necessary for completion of the objective.

The delivery system of this competency-based program is through the use of instructional modules. The characteristics of the module are as follows:

1. The module fits the focus of the program (modules are designed and tailor-made to fit needs of the particular program).

2. Module objectives are stated behaviorally or in performance terms.

3. The module must contain the diagnostic materials (pretest) and indicates the process for assessing the performance in respect to the objectives.

4. Instructional materials for the objectives, alternative ways of achieving the objective are also included in the module.

5. The module is a totally self-contained package.

ONE FORMAT OF A MODULE IS AS FOLLOWS:

I. RATIONALE: At the beginning of the module, write a statement of introduction and/or purpose.

II. PREREQUISITES:
List objectives, the achievement of which should have preceded the objective under consideration.

III. PRETEST: Successful completion of pretest should indicate competence with objective. The pretest could act as a set inductor or advance organizer.

IV. OBJECTIVE: State objectives behaviorally (in knowledge or performance terms). Generally there are no more than a few objectives per module.

V. PROCEDURES:
Sequence steps in achieving the objective to be followed by the student.

VI. MATERIALS AND RESOURCES:
List all items or materials necessary to complete the module objectives.

VII. POST TEST EVALUATION:
Evaluate achievement of the objective of the module. The Post test may be an alternate form of the pretest.

SOME GUIDELINE QUESTIONS FOR THE CRITIQUING OF A MODULE ARE AS FOLLOWS:

1. Does the objective describe a desired competency?

2. Does the objective measure a performance?

3. Does the objective indicate level of expected mastery?

4. Does the objective indicate conditions under which the performance takes place?

5. Are practice situations provided for prior to final evaluation?

6. Is the evaluation appropriate to the objective?

7. Are the performance standards clear?

8. Is the criteria relative to evaluation clear?

The remaining pages represent the process materials by which the competency-based program is being developed at St. John Fisher College, and consists of Appendix A--Definitions, B--Performance Statement Identification, C--A Systems Design for Development of Performance Statements, D--A Programmed System for Module Development.

APPENDIX A--DEFINITIONS

Goal Statement	-	A goal statement is a suggested "competency" submitted by a school district or teacher training institution and revised to include an action verb and a single concept.
Performance Statement Performance Activity	-	A description of experiences/activities which, upon completion, can indicate attainment of the goal statement.
Recycling Process	-	A procedure of repeating exercises of steps to clarify goal statements.
Knowledge Objective	-	A knowledge objective deals with what is to be known or understood, and contains all three elements of a behavioral objective.
Performance Objective	-	A performance objective deals with what a person is able to do, and contains all three elements of a behavioral objective.
Product Objective Consequence Objective	-	A product (consequence) objective deals with the achievement of students as a result of instruction.
Affective Objective	-	An affective objective deals with feelings, attitudes, values, and beliefs and need not contain all elements of a behavioral objective.
Experiential Objective	-	An experiential objective deals with an experience or activity rather than an intended outcome and need not contain all elements of a behavioral objective.
Behavioral Objective	-	A behavioral objective is a statement which defines the following (1) <u>what</u> is to be <u>done</u>, (outcome) (2) context or setting in which it will be done (conditions), and (3) criterion level for achievement (extent).

APPENDIX B--PERFORMANCE STATEMENT IDENTIFICATION

NUMBER GOAL STATEMENT FROM APPENDIX B OR STEP TWO _____

IDENTIFY THE PERFORMANCES OR ACTIVITIES WHICH DEFINE THE GOAL STATEMENT. THESE ARE CALLED "PERFORMANCES STATEMENTS."

LETTER

A. _____

B. _____

C. _____

D. _____

E. _____

F. _____

G. _____

H. _____

I. _____

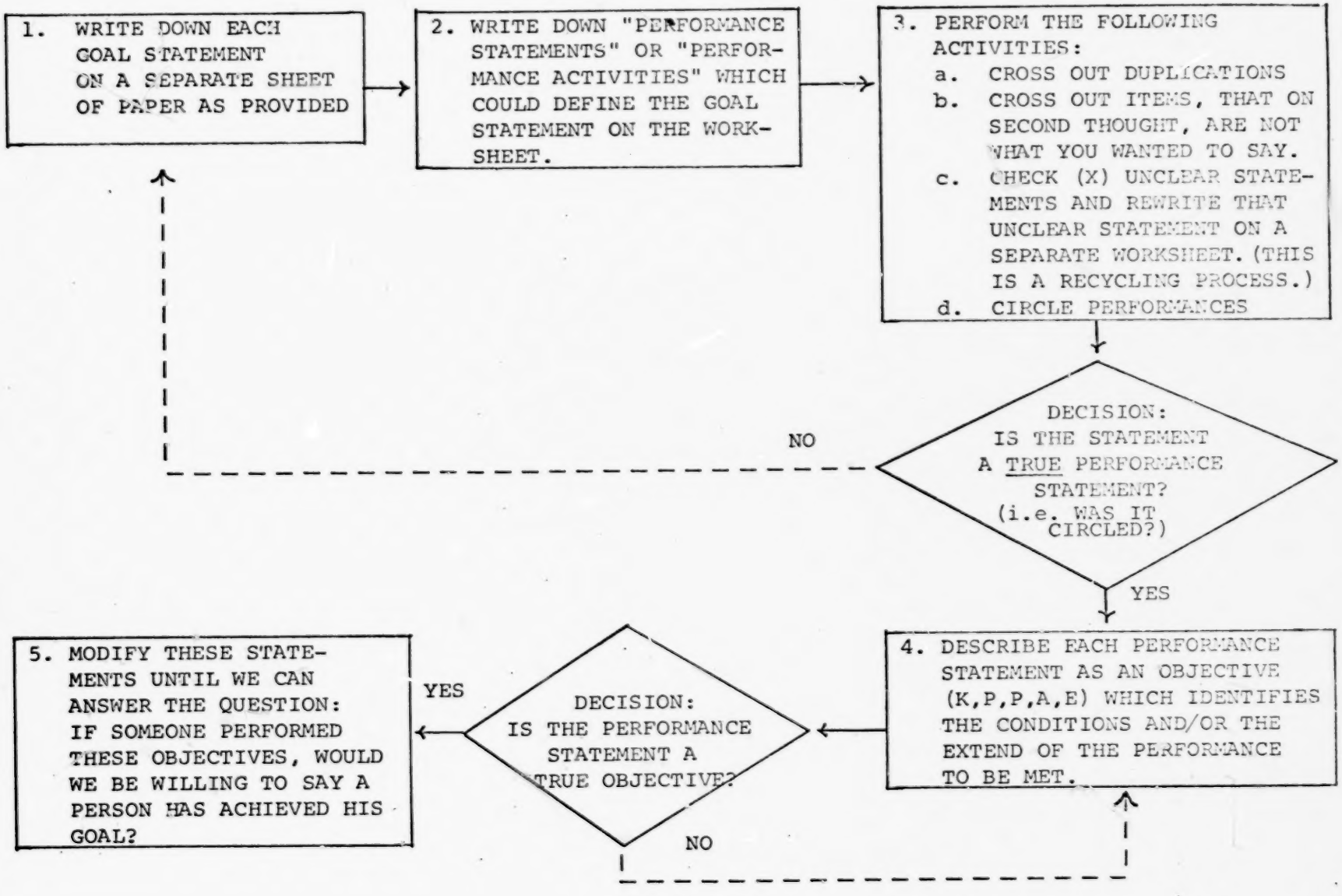
J. _____

PERFORMANCE STATEMENTS WRITTEN AS OBJECTIVES*
KNOWLEDGE CBJECTIVES(S)**
PERFORMANCES OBJECTIVES(S)**
PRODUCT OBJECTIVE(S)**
AFFECTIVE "OBJECTIVES"(S)
EXPERIENCE "OBJECTIVE"(S)

* When you write the objective, indicate the letter of the performance statement to which the objective applies. In writing the objective one might find similar activities under another goal; if so, write the number of the goal statement and the letter of the performance statement to which the objective applies.

**Goal statements which are categorized as Knowledge, Performance, and Product should be written as specific behavioral objectives.

APPENDIX C--A SYSTEMS DESIGN FOR DEVELOPMENT OF PERFORMANCE STATEMENTS


1. WRITE DOWN EACH GOAL STATEMENT ON A SEPARATE SHEET OF PAPER AS PROVIDED
2. WRITE DOWN "PERFORMANCE STATEMENTS" OR "PERFORMANCE ACTIVITIES" WHICH COULD DEFINE THE GOAL STATEMENT ON THE WORKSHEET.
3. PERFORM THE FOLLOWING ACTIVITIES:
a. CROSS OUT DUPLICATIONS
b. CROSS OUT ITEMS, THAT ON SECOND THOUGHT, ARE NOT WHAT YOU WANTED TO SAY.
c. CHECK (X) UNCLEAR STATEMENTS AND REWRITE THAT UNCLEAR STATEMENT ON A SEPARATE WORKSHEET. (THIS IS A RECYCLING PROCESS.)
d. CIRCLE PERFORMANCES
DECISION: IS THE STATEMENT A TRUE PERFORMANCE STATEMENT? (i.e. WAS IT CIRCLED?)
NO
YES
4. DESCRIBE EACH PERFORMANCE STATEMENT AS AN OBJECTIVE (K,P,P,A,E) WHICH IDENTIFIES THE CONDITIONS AND/OR THE EXTEND OF THE PERFORMANCE TO BE MET.
DECISION: IS THE PERFORMANCE STATEMENT A TRUE OBJECTIVE?
NO
YES
5. MODIFY THESE STATEMENTS UNTIL WE CAN ANSWER THE QUESTION: IF SOMEONE PERFORMED THESE OBJECTIVES, WOULD WE BE WILLING TO SAY A PERSON HAS ACHIEVED HIS GOAL?

APPENDIX D--A PROGRAMMED SYSTEM FOR MODULE DEVELOPMENT

LEARNING MODULE OUTLINE

I. IDENTIFY THE COMPONENT (General Area of Concern):

II. LIST THE CLUSTERS (Parts) OF THE ABOVE COMPONENT.

A. _____

B. _____

C. _____

D. _____

E. _____

F. _____

G. _____

H. _____

I. _____

J. _____

III. CHOOSE ONE OF THE ABOVE CLUSTERS AND WRITE YOUR CLUSTER GOAL. (This may be general in nature.)

_____

_____

_____

IV. LIST THE CLUSTER PREREQUISITES NEEDED TO BEGIN WORK TOWARD THE CLUSTER GOAL WHICH YOU INDICATED IN ITEM III. (If none, indicate "No Prerequisites")

A. _____

B. _____

C. _____

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V. LIST THE SPECIFIC BEHAVIORAL OBJECTIVES (COMPETENCIES) NEEDED TO MEET YOUR GENERAL CLUSTER GOAL (Task Analysis). IDENTIFY THE BEHAVIORAL SITUATION (process element + content element). THE CONDITION FOR DEMONSTRATING ACHIEVEMENT, AND THE CRITERION LEVEL.

DESCRIPTION OF CLUSTER: _____

ID#	CONDITIONS	BEHAVIOR		CRITERION FOR SUCCESS	DOMAIN	LEVEL
		PROCESS ELEMENT	CONTENT ELEMENT			

VI. SEQUENCE THE ABOVE OBJECTIVES, IF NECESSARY (e.g., in order of importance, or chronological order of development, etc.). _____

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VII Select one of your specific behavioral objectives (competencies) from ITEM V. Identify it below.

_____

_____

VIII. List the knowledge or skill prerequisites needed to begin to work on this objective selected in ITEM VIII. If no prequisites are needed, write "NONE".

A._____

B._____

C._____

IX. Design your pretest assessment (Diagnosis). Questions should relate both to the prerequisites indicated in ITEM IX and to the objective listed in ITEM VIII. Use an extra page if you need it.

1.
2.
3.
4.
5.

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IDENTIFY THE BEHAVIORAL OBJECTIVE (Competency)

X. Design your Post Test assessment. These questions may be identical or in a form equivalent to your Pretest. Questions relating to "Prerequisites" may be omitted here.

1.
2.
3.

XI. Indicate what you will consider success on the Pretest and the Post Test (e.g., All Correct, 90%, etc.)

A. Pretest Success_____ B. Post Test Success_____

XII. Select the activities which you will prescribe for those who answered incorrectly those Pretest questions relating to the prerequisites. (You may want to relate the Pretest item number to the prerequisite item number.)

	PROCESS ELEMENT: VERB	CONTENT ELEMENT: DESCRIPTION OF ACTIVITY
A		
B		
C		
D		
E		

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IDENTIFY THE BEHAVIORAL OBJECTIVE (Competency)

XIII. Select the activities which may be chosen by the student in order to achieve the objective indicated in ITEM VIII. Alternate routes should be selected according to the different learner characteristics in your class (e.g., Slow, Medium, Fast, Basic, Advanced, Urban, Suburban, Rural, Verbal, Nonverbal). These activities should show consistency between Items VIII, X, and XI.

One method which can be employed is to study the "Methods Setting" chart and predetermine the kinds of activities which seem appropriate, place a number in the appropriate cell of the matrix, and write the activity below. Each of the activities must be consistent with the stated behavioral objective.

The selection of activities can be Teacher-Controlled, Teacher-Student planned, Student planned, or Unstructured.

Consideration should now be given as to where assessment of achievement might take place. Environments other than classroom might prove to be the optimal site for evaluation.

PROCESS ELEMENT VERB	CONTENT ELEMENT: DESCRIPTION OF ACTIVITY
F	
G	
H	
I	
J	
K	

You may now select from these activities as you prescribe the efforts of your students in accordance with their capabilities.

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IDENTIFY THE BEHAVIORAL OBJECTIVE (Competency)

METHODS-SETTING CHART

ASSESSMENT SETTING / METHODS OF INSTRUCTION	HOME	CLASSROOM	COMMUNITY Field trips etc.	RESOURCE CENTER	LABORATORY Microteaching Simulation Language Science
Community Participation					
Conference					
Creative Dramatics					
Demonstration					
Diagnosis					
Directed Observation					
Discussion					
Drill					
Experimentation					
Field Experience					
Field Trip					
Games					
Home Observation and/or Experiment					
Independent Study					
Interviews					
Laboratory Experiences					
Lecture					
Library Research and Reading					
Manipulation and Tactile Activity					
Modeling and Imitation					
Museum and Planetarium Visits					
Peer Group Instruction					
Problem Solving					
Programmed Instruction					
Projects					
Reading					
Recitation					
Role Playing					
Seminar					
Sensitivity Training					
Shopwork					
Simulation					
Skill Practice Sessions					
Small Group Study					
Tutorial Sessions					
Other					

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IDENTIFY THE BEHAVIORAL OBJECTIVE (Competency)

XIV. Now that you have selected the activities directed toward the achievement on the specific behavioral objectives, you may still feel that there is a need for some introductory instructional activities on your part as teacher. These might be included in the following activities.

	DESCRIPTION
AN ADVANCE ORGANIZER	
PERCEIVED PURPOSE	
ELICITOR	
PROMPT OR CUES	
KNOWLEDGE OF RESULTS	
OTHER	

These would normally appear near the beginning of the final draft of your module.

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IDENTIFY THE BEHAVIORAL OBJECTIVE (Competency)

XV. Now that you have selected the activities, you can now concentrate on the communications or media forms for the activities. What media will be needed? Are they available from a commercial source? If so, what is the source and cost? Will they need to be produced? It's fun to make your own.

1. Audio Tape
2. Audio Tapes with Film Loops
3. Audio Tapes with Slides
4. Books
5. Films (8 or 16 mm)
6. Film Loops
7. Film Strips
8. Micro Projection
9. Models
10. Periodicals
11. Overhead Transparencies
12. Photographs
13. Printed Directions
14. Printed Directions with Audio Tapes
15. Records with Slides
16. Slides
17. Video Tapes
18. Voice

XVI. Is Item XV consistent with XIV, consistent with XIII, consistent with X, consistent with VII?

XVII. If so, you are ready to compile the module. A module may be put together in the following sequence:

FIRST:	ITEM	I	EIGHTH:	ITEM	XII
SECOND:	"	III	NINTH:	"	XIII & XV: State Activities with Process or Action Verb
THIRD:	"	VII			
FOURTH:	"	XIV			
FIFTH:	"	VIII	TENTH:	"	X: You may choose NOT to include the Post Test in the Module Booklet
SIXTH:	"	IX			
SEVENTH:	"	XI A	ELEVENTH:	"	XI B

XVIII. You are now ready for a first trial. You should want to make note during each trial to assess the strengths and weaknesses from both yours and the students' point of view. These would then be taken into consideration before you use the module again.

CONGRATULATIONS!!!!!!!!

The first module is always the most difficult to complete!

THE REAL CHALLENGE IS TO BEGIN!

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